CLAIMS

What is claimed is:

1. An isolated nucleic acid molecule comprising a polynucleotide having a sequence selected from the group consisting of:

(a) a sequence encoding amino acids from about 1 to about 744 of SEQ ID NO:3;

(b) a sequence encoding amino acids from about 2 to about 744 of SEQ ID NO:3;

(c) a sequence encoding amino acids from about 1 to about 691 of SEQ ID NO:6;

(d) a sequence encoding amino acids from about 2 to about 691 of SEQ ID NO:6;

(e) a sequence encoding amino acids from about 1 to about 724 of SEQ ID NO:9;

(f) a sequence encoding amino acids from about 2 to about 724 of SEQ ID NO:9;

(g) a sequence encoding amino acids from about 1 to about 795 of SEQ ID NO:12;

(h) a sequence encoding amino acids from about 2 to about 795 of SEQ ID NO:12;

(i) complements of the sequences of (a)-(h);

(j) a sequence having 50-2232 contiguous nucleotides from the coding region of SEQ ID NO:1;

(k) a sequence having 50-2073 contiguous nucleotides from the coding region of SEQ ID NO:4;

(l) a sequence having 50-2172 contiguous nucleotides from the coding region of SEQ ID NO:7;

(m) a sequence having 50-2385 contiguous nucleotides from the coding region of SEQ ID NO:10;

(n) sequences having at least 90% identity to the sequences of (a) - (m);

(o) sequences having 100-1500 contiguous nucleotides from the coding region of SEQ ID NO:1, SEQ ID NO:4, SEQ ID NO:7 or SEQ ID NO:10;

(p) sequences having 500-1000 contiguous nucleotides from the coding region of SEQ ID NO:1, SEQ ID NO:4, SEQ ID NO:7 or SEQ ID NO:10;

(r) sequences of (a) – (h), except for at least one amino acid substitution in the encoded amino acid sequence; and

(s) sequences of (a) – (h), expect for a conversion of a conserved lysine to an alanine at an ATP binding site of the encoded amino acid sequence.

2. A method of making a vector comprising inserting a nucleic acid molecule of claim 1 into said vector in operable linkage to a promoter.

3. A vector produced by the method of claim 2.

4. A method of making a host cell comprising transforming or transfecting a vector of claim 3 into a cell.

5. A host cell produced by the method of claim 4.

6. A method of making a polypeptide, comprising culturing the host cell of claim 5 under conditions such that said polypeptide is expressed and recovering said polypeptide.

7. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

(a) sequences having at least 95% identity to an amino acid sequence of:

(i) amino acids from about 1 to about 744 of SEQ ID NO:3,

(ii) amino acids from about 2 to about 744 of SEQ ID NO:3,

(iii) amino acids from about 1 to about 691 of SEQ ID NO:6,

(iv) amino acids from about 2 to about 691 of SEQ ID NO:6,

(v) amino acids from about 1 to about 724 of SEQ ID NO:9,

(vi) amino acids from about 2 to about 724 of SEQ ID NO:9,

(vii) amino acids from about 1 to about 795 of SEQ ID NO:12, or

(viii) amino acids from about 2 to about 795 of SEQ ID NO:12;

(b) sequences having, expect for at least one amino acid substitution, an amino acid sequence of: (i) – (viii);

(c) sequences having, expect for at least one amino acid substitution, an amino acid sequence of: (i) – (viii); and

(d) sequences having, expect for a conversion of a conserved lysine to an alanine at the ATP binding site of said polypeptide, an amino acid sequence of: (i) – (viii).

8. An epitope-bearing portion of a polypeptide selected from the group consisting of SEQ ID NO:3, SEQ ID NO:6, SEQ ID NO:9 and SEQ ID NO:12.

9. The epitope-bearing portion of claim 8, which comprises about 5 to about 50 contiguous amino acids.

10. An isolated antibody that binds to the polypeptide of claim 7.

11. A complex comprising a polypeptide of claim 7 and a Dishevelled protein.

12. A complex comprising a fragment of a polypeptide of claim 7 and a Dishevelled protein.

13. A method of identifying an inhibitor or enhancer of PAR-1 phosphorylation activity, comprising:

(a) contacting a cell transfected with at least an expression vector encoding Wnt with a candidate inhibitor or enhancer; and

(b) detecting an increase or decrease in Dsh phosphorylation,

wherein a decrease in Dsh phosphorylation indicates the presence of an inhibitor and an increase in Dsh phosphorylation indicates the presence of an enhancer.

14. An isolated PAR-1 modulator selected from the group consisting of an antisense oligonucleotide, a ribozyme, a protein, a polypeptide, and a small molecule.

15. The isolated PAR-1 modulator of claim 14, wherein said PAR-1 modulator is an antisense molecule or the complement thereof.

16. The isolated PAR-1 modulator of claim 15, wherein said antisense molecule or the complement thereof has at least 15 consecutive nucleic acids of the sequence of SEQ ID NO:3, SEQ ID NO:6, SEQ ID NO:9 or SEQ ID NO:12 or which hybridizes under high stringency conditions to said at least 15 consecutive nucleic acids of the sequence of SEQ ID NO:3, SEQ ID NO:6, SEQ ID NO:9 or SEQ ID NO:12.

17. The isolated PAR-1 modulator of claim 15, wherein said antisense molecule is selected from the group consisting of SEQ ID NO:13, SEQ ID NO:15 and SEQ ID NO:17.

18. The isolated PAR-1 modulator of claim 14, wherein said PAR-1 modulator is selected from the group consisting of an antibody and an antibody fragment.

19. The isolated PAR-1 modulator of claim 14, wherein said polypeptide has an amino sequence with at least 95% identity to the amino acid sequence provided in SEQ ID NO:22.

20. A composition, comprising a therapeutically effective amount of a PAR-1 modulator of claim 14 in a pharmaceutically acceptable carrier.

21. A method of treating a mammal with a disease or disorder associated with a PAR-1 polypeptide, comprising administering to the mammal a composition including a therapeutically effective amount of a PAR-1 modulator of claim 14.

22. The method of claim 23, wherein said PAR-1 modulator is an antisense molecule is selected from the group consisting of SEQ ID NO:13, SEQ ID NO:15 and SEQ ID NO:17.

23. The method of claim 21, wherein said PAR-1 modulator is a polypeptide that has an amino sequence with at least 95% identity to the amino acid sequence provided in SEQ ID NO:22.

24. The method of claim 21, wherein said PAR-1 modulator is selected from the group consisting of an antibody and an antibody fragment.

25. The method of claim 21, wherein said PAR-1 modulator is administered *ex vivo* to said mammalian cell.

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